

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P209238

Luminaire Tested: **LDSQ4B20D010 EU4B10209727 4LBCSSQ1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209238
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35089)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B20D010 EU4B10209727 4LBCSSQ1MMS
Description: PORTFOLIO LD4 SERIES 4" RECESSED FIXTURE WITH A SQUARE SHALLOW CAST METALLIC SILVER TRIM
MEDIUM DISTRIBUTION WITH MATTE METALLIC SILVER TRIM
WATTAGE D010TR-21.86 W DE010-20.46 W D5LT-21.24 W DMX-20.89 W DL2-22.5 W DL3-21.8 6 W DLE-22.46 W
Light Source: HIGH LUMEN LED 2700 K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1419.1 lumens
Efficiency: N/A
Efficacy: 68.2 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Direct

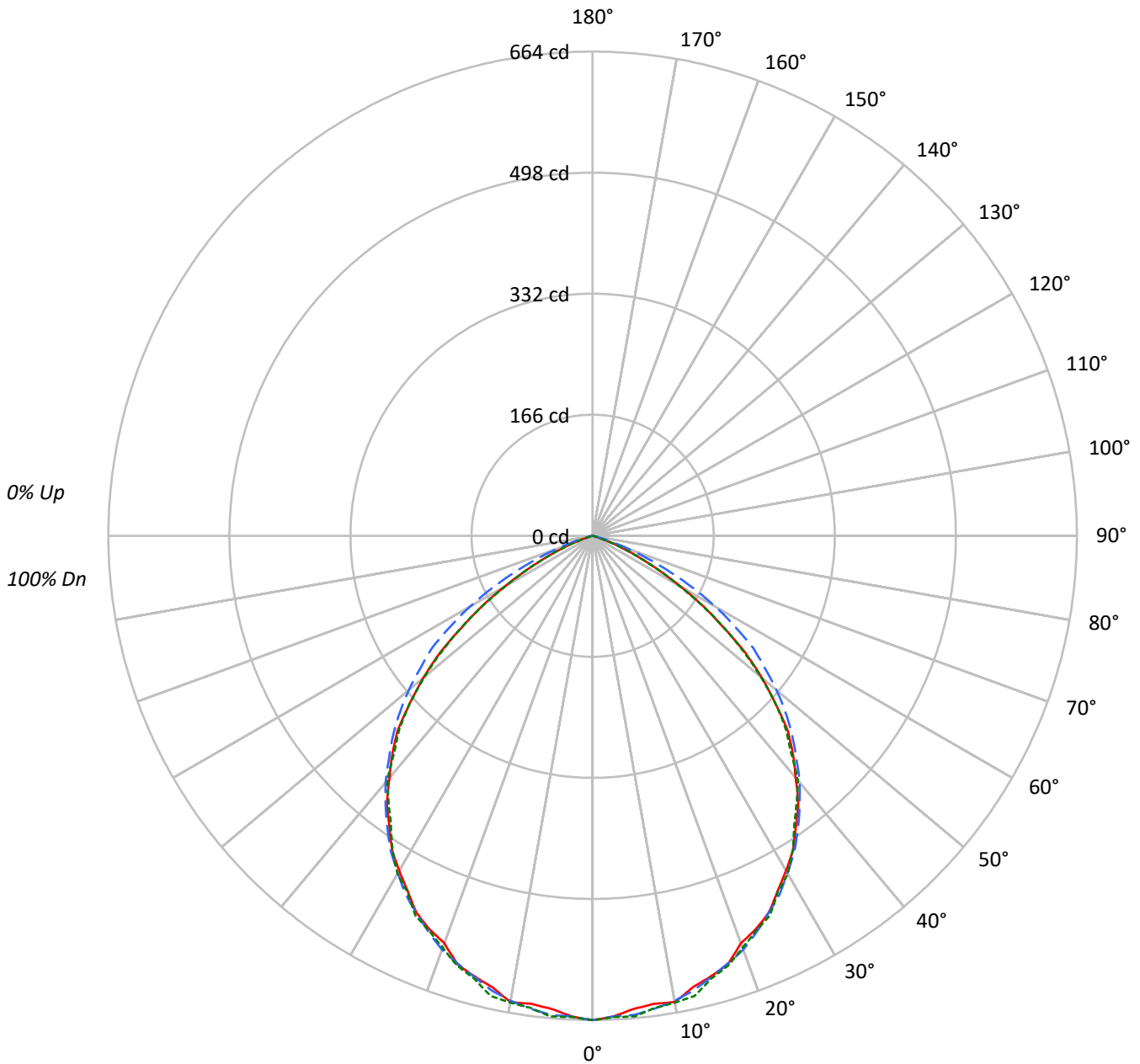
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89																			
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77																			
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67																			
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41																			
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37																			
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	34																			
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.7	4.4
10°-20°	177.4	12.5
20°-30°	263.3	18.6
30°-40°	305.1	21.5
40°-50°	292.5	20.6
50°-60°	215.1	15.2
60°-70°	92.9	6.5
70°-80°	10.0	0.7
80°-90°	0.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	503.5	35.5
0°-40°	808.5	57.0
0°-60°	1316.1	92.7
0°-90°	1419.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1419.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	664	664	664	664	664	
5°	651	658	660	661	662	62
15°	626	629	627	628	628	176
25°	571	570	571	572	575	261
35°	486	489	491	490	482	304
45°	378	379	387	381	375	288
55°	219	242	269	241	220	197
65°	72	90	117	89	70	74
75°	2	3	10	2	2	6
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	664.3	664.3	664.3	664.3	664.3	664.3	664.3	664.3	664.3	664.3	664.3
2.5°	659.6	667.2	668.1	663.4	661.5	658.7	665.3	660.6	662.5	660.6	659.6
5°	651.1	659.6	660.6	660.6	658.7	657.7	660.6	659.6	658.7	656.8	659.6
7.5°	647.4	652.1	656.8	651.1	654.0	653.0	659.6	656.8	655.8	655.8	654.0
10°	649.2	648.3	652.1	646.4	648.3	646.4	652.1	652.1	650.2	648.3	647.4
12.5°	634.1	641.7	641.7	640.7	638.9	636.0	641.7	645.5	639.8	639.8	638.9
15°	625.6	627.5	628.5	628.5	627.5	629.4	632.3	628.5	629.4	624.7	626.6
17.5°	616.2	612.4	615.3	613.4	614.3	616.2	620.0	620.0	614.3	613.4	615.3
20°	594.5	605.8	606.8	601.1	602.1	602.1	608.7	603.0	606.8	602.1	603.9
22.5°	584.1	591.7	592.6	585.1	589.8	584.1	590.7	582.2	591.7	585.1	587.9
25°	570.9	570.0	572.8	569.0	570.0	570.0	574.7	570.9	573.7	570.0	570.9
27.5°	549.2	556.8	555.8	552.0	553.9	553.0	562.4	552.0	557.7	553.0	554.9
30°	530.3	536.9	535.1	531.3	531.3	528.5	538.8	536.0	535.1	535.1	534.1
32.5°	511.5	512.4	510.5	511.5	512.4	508.6	517.1	513.4	512.4	513.4	514.3
35°	486.0	486.0	487.9	485.0	488.8	488.8	496.4	491.6	490.7	487.9	490.7
37.5°	463.3	460.5	461.5	461.5	463.3	465.2	469.0	467.1	467.1	464.3	466.2
40°	433.1	431.3	434.1	434.1	436.9	436.9	440.7	438.8	441.6	441.6	441.6
42.5°	406.7	406.7	404.8	407.7	408.6	407.7	414.3	413.3	414.3	412.4	413.3
45°	378.4	378.4	376.5	375.6	380.3	379.4	386.9	384.1	387.8	386.0	386.9
47.5°	339.7	344.4	341.6	344.4	350.1	351.0	355.8	353.9	357.6	354.8	358.6
50°	302.9	302.9	305.7	309.5	315.2	316.1	321.8	325.6	327.5	328.4	329.3
52.5°	264.2	263.3	266.1	270.8	275.5	279.3	285.0	290.6	294.4	300.1	297.3
55°	218.9	220.8	223.6	229.3	236.9	241.6	246.3	253.8	260.5	263.3	268.9
57.5°	180.2	178.4	180.2	187.8	196.3	200.1	206.7	214.2	223.6	229.3	231.2
60°	139.7	140.6	142.5	149.1	155.7	161.4	164.2	176.5	185.0	190.6	194.4
62.5°	102.9	104.7	106.6	112.3	118.9	123.6	128.3	138.7	146.3	151.9	155.7
65°	71.7	72.7	75.5	78.3	84.9	89.6	93.4	101.9	109.5	114.2	117.0
67.5°	44.4	45.3	47.2	51.0	55.7	59.5	63.2	68.9	75.5	80.2	81.2
70°	22.6	23.6	24.5	27.4	31.1	33.0	35.9	40.6	45.3	49.1	51.0
72.5°	7.5	7.5	8.5	10.4	12.3	14.2	15.1	19.8	23.6	25.5	26.4
75°	1.9	1.9	1.9	1.9	1.9	2.8	2.8	5.7	7.5	9.4	10.4
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9	1.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	664.3	664.3	664.3	664.3	664.3	664.3	664.3	664.3	664.3	664.3
2.5°	664.3	662.5	661.5	662.5	662.5	661.5	664.3	668.1	672.8	660.6
5°	663.4	661.5	663.4	657.7	660.6	658.7	662.5	661.5	665.3	661.5
7.5°	660.6	656.8	657.7	654.9	658.7	654.0	656.8	662.5	658.7	653.0
10°	651.1	649.2	655.8	646.4	644.5	648.3	655.8	650.2	648.3	650.2
12.5°	641.7	641.7	644.5	637.0	637.9	639.8	643.6	639.8	641.7	646.4
15°	631.3	629.4	634.1	628.5	627.5	625.6	629.4	629.4	631.3	628.5
17.5°	619.0	616.2	616.2	614.3	613.4	618.1	620.0	620.9	621.9	618.1
20°	603.9	603.0	605.8	603.0	603.9	604.9	604.9	603.0	611.5	601.1
22.5°	587.9	590.7	587.0	585.1	587.0	588.8	588.8	589.8	587.9	586.0
25°	571.9	573.7	574.7	569.0	571.9	569.0	575.6	576.6	572.8	574.7
27.5°	557.7	554.9	553.9	550.2	552.0	551.1	552.0	552.0	557.7	550.2
30°	536.0	533.2	534.1	531.3	532.2	531.3	532.2	532.2	536.0	535.1
32.5°	515.2	512.4	513.4	510.5	510.5	511.5	509.6	509.6	512.4	510.5
35°	495.4	488.8	489.8	488.8	489.8	486.0	486.0	485.0	486.9	482.2
37.5°	467.1	464.3	463.3	462.4	463.3	461.5	463.3	460.5	463.3	459.6
40°	441.6	439.7	440.7	435.0	435.0	436.0	434.1	433.1	434.1	437.9
42.5°	416.2	412.4	410.5	408.6	409.5	406.7	405.8	403.9	405.8	402.0
45°	386.0	386.0	385.0	380.3	381.2	381.2	377.5	373.7	374.6	374.6
47.5°	358.6	356.7	355.8	351.0	350.1	349.2	345.4	342.5	342.5	339.7
50°	328.4	326.5	323.7	319.0	317.1	311.4	308.6	304.8	301.0	301.0
52.5°	300.1	293.5	289.7	282.2	279.3	276.5	268.9	266.1	263.3	260.5
55°	266.1	260.5	252.9	244.4	240.6	235.9	228.4	222.7	218.9	219.9
57.5°	233.1	223.6	216.1	204.8	200.1	197.2	189.7	182.1	178.4	178.4
60°	192.5	185.0	175.5	165.1	161.4	156.6	147.2	142.5	139.7	136.8
62.5°	153.8	148.2	139.7	126.5	123.6	118.9	112.3	106.6	103.8	103.8
65°	115.1	109.5	101.9	92.5	88.7	84.9	79.3	73.6	70.8	69.8
67.5°	81.2	74.5	67.9	60.4	57.6	55.7	50.0	46.2	44.4	43.4
70°	49.1	45.3	40.6	34.9	32.1	30.2	26.4	23.6	22.6	21.7
72.5°	25.5	22.6	18.9	15.1	13.2	11.3	9.4	7.5	6.6	6.6
75°	9.4	7.5	4.7	2.8	1.9	1.9	1.9	1.9	1.9	1.9
77.5°	1.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°









(END OF REPORT)